

REMARKS

Claims 1, 8-11, 18 and 20 have been rejected under 35 USC 103(a) as unpatentable over Matsuyama. The rejection is respectfully traversed.

Matsuyama fails to disclose an area between a mask and a refractive lens system with a medium which has a refractive index (n) between 1.2 and 2. Rather, as illustrated in Figures 2, 8 and 17b of Matsuyama, there are *three different media* between a mask (R) and a lens system (PL, L1) (air with a refractive index n_1 of 1, a distortion correction plate (G1) with a refractive index n_2 of 1.50839, and again air with a refractive index n_1 of 1, see also paragraphs 0247-0250. Additionally, Matsuyama fails to disclose choosing a refractive index (n) of the medium and the aperture of the refractive lens system so that beams representing deflection intensity maxima of first order, second order, and third order are collected by the refractive lens system, as stated by the Examiner. To accomplish this, the whole area between the mask (R) and the refractive lens system (PL, L1) would have to be completely filled with a medium which, for example, has a relatively high refractive index (n) between 1.2 and 2. Moreover, a thin distortion correction plate (G1) (Figures 2, 8 and 17b) would have to be provided with a thickness t more than 4 or 8 times as big as shown, which could not be arranged on the apparatus. Specifically, as one example in Matsuyama, the correction plate (G1) has a thickness t of 1mm (see, paragraph 0247, Figure 2, Figure 17b), and the distance D between the mask (R) and the lens system (PL, L1) is 60.30364mm when air with a refractive index n_1 of 1 is used between the mask (R) and the correction plate (G1), and the correction plate (G1) and the lens system (PL, L1), see paragraph 0246, Figure 2, Figure 17b.

According to equation (2) of Matsuyama, the distance between the mask (R) and the lens system (PL, L1) is reduced from d to D when instead of air with a refractive index n_1 of 1, a different medium with a higher refractive index is used between the mask (R) and the correction plate (G1), and the correction plate (G1) and the lens system (PL, L1). Hence, as an example, even

if a material with a refraction index of 4 was used between the mask (R) and the correction plate (G1), and the correction plate (G1) and the lens system (PL, L1), according to equation (2), the distance D between the mask and the lens system would be $D = 60.30364\text{mm}/4 = 15.07591\text{ mm}$. The thin correction plate between the mask and the lens system, which according to Matsuyama has a thickness of 1 mm, would not completely fill the whole area between the mask and the refractive lens system, as required by the invention.

Additionally, the Examiner states that “Matsuyama does not disclose explicitly that the first, second and third order deflection intensity maxima are collected by the refractive system,” but that since “Fig[s]. 8 and 9 [disclose] the beams of the light passing through the mask being collected by the lens of the optical system by passing through the medium” it would have been obvious to the skilled artisan “to provide the medium and the lens to collect the different order of deflection intensity maxima in order to improve exposure.” Applicants respectfully disagree with the Examiner, and submit that the Examiner’s statement is merely conclusory in nature. That is, the Examiner fails to cite a reference in support of his/her reasons to modify the reference. Rather, the Examiner simply concludes that it would have been obvious to modify the reference without providing any evidentiary support on the record. The Examiner is kindly requested to cite a reference, or withdraw the rejection.

Since the recited structure and method are not disclosed by the applied prior art, claims 1 and 20 are patentable. Claims 8-11 and 18, depending either directly or indirectly from claim 1, are similarly patentable.

Claims 4, 5, 9 and 12-16 have been rejected under 35 USC 103(a) as unpatentable over Matsuyama in view of Fukuda; claim 6 has been rejected under 35 USC 103(a) as unpatentable over Matsuyama in view of Fukuda, further in view of Epple; claim 7 has been rejected under 35 USC 103(a) as unpatentable over Matsuyama in view of Komoriya; claim 17 has been rejected under 35

USC 103(a) as unpatentable over Matsuyama in view of Fukuda, further in view of Komoriya; and claim 19 has been rejected under 35 USC 103(a) as unpatentable over Matsuyama in view of Fukuda, further in view of Shiraishi. The rejections are respectfully traversed for the same reasons presented in the arguments above.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue. If it is determined that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

In the event the U.S. Patent and Trademark office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 03-1952 referencing docket no. **543822001700**. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

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